

AMENDMENTS TO THE CLAIMS

1. - 65. (Canceled)

66. (Currently Amended) A method of separating solid particles from a suspension, comprising:

applying one or more stimuli to said suspension, said one or more stimuli adapted to control inter-particle forces between said solid particles to form a conditioned state comprising a solids-rich phase and a liquids rich phase, wherein each stimulus is selectively operable to effect reversibly operable conditioning between an initial state prevailing prior to said applying one or more stimuli and said conditioned state resultant from said applying one or more stimuli, thereby to control interaction between said solid particles, wherein said one or more stimuli comprise a chemical additive, wherein said chemical additive is a photosensitive molecule, incorporated within one or more polymers, at least one which is a water-soluble polymer, said photosensitive molecule being associated with a predetermined change in light wavelength;

consolidating said solids-rich phase by facilitating said reversibly operable conditioning to liberate at least some liquid otherwise trapped among said solid particles; and

separating said solids-rich phase from said liquids-rich phase.

67. (Currently Amended) A method of controlling consolidation of a bed of solid particles within a liquid including applying one or more stimuli to said bed, said one or more stimuli adapted to control inter-particle forces between said solid particles to form a conditioned state comprising a solids-rich phase and a liquids-rich phase, wherein each stimulus is selectively operable to effect reversibly operable conditioning between an initial state prevailing prior to said applying one or more stimuli and said conditioned state resultant from said applying one or more stimuli, thereby to control interaction between said solid particles, said stimulus being applied for a predetermined time thereby to liberate at least some liquid otherwise trapped within said bed, wherein said one or more stimuli comprise a chemical additive, wherein said chemical additive is a photosensitive molecule, incorporated within one or more polymers, at least one which is a water-soluble polymer, said photosensitive molecule being associated with a predetermined change in light wavelength; and separating said solids-rich phase from said liquids-rich phase.

68. (Previously Presented) A method according to claim 66 or claim 67, wherein said reversibly operable conditioning is facilitated by removal of said one or more stimuli, and/or by addition of another of said one or more stimuli.

69. (Previously Presented) A method according to claim 66 or claim 67, wherein said reversibly operable conditioning is facilitated substantially by way of flocculation and/or coagulation.

70. (Previously Presented) A method according to claim 66 or claim 67, wherein said inter-particle forces are attractive or repulsive between said solid particles within said liquid.

71. (Previously Presented) A method according to claim 66 or claim 67, wherein each of said one or more stimuli is applied for a predetermined time, thereby to induce the desired attraction or repulsion and subsequently removed or altered, thereby to effect said reversibility.

72. - 90. (Canceled)

91. (Currently Amended) A method according to claim ~~90~~66 or 67, wherein said polymers suitable for the inclusion of photosensitive units include polypeptides comprising lysine and glutamic acid.

92. (Currently Amended) A method according to claim ~~90~~66 or 67, wherein said polymer is selected from the group consisting of polyacrylamides, polysaccharides, polyelectrolytes and other water-soluble molecules.

93. (Currently Amended) A method according to claim ~~90~~66 or 67, wherein said photosensitive units are spyropyrans, spyrooxazines, azo benzenes, or triphenyl methane derivatives.

94. (Previously Presented) A method according to claim 93, wherein said spyropyrans and/or spyrooxazines are selected from the group consisting of benzoindolino pyranospiran (BIPS), benzoindolino spyrooxazine (BISO), naphthalenindolino spyrooxazine (NISO) and quinolinyndolino spyrooxazine (QISO).

95. (Currently Amended) A method according to claim ~~90~~66 or 67, wherein said polymers responsive to said change in wavelength are selected from the group consisting of poly dimethylacrylamide/N-4-phenylazophenylacrylamide (DMAAm), poly dimethylacrylamide/ 4-phenylazophenylacrylate (DMAA) and similar polymers.

96. - 103. (Canceled)